FIG. 1
BACKGROUND ART

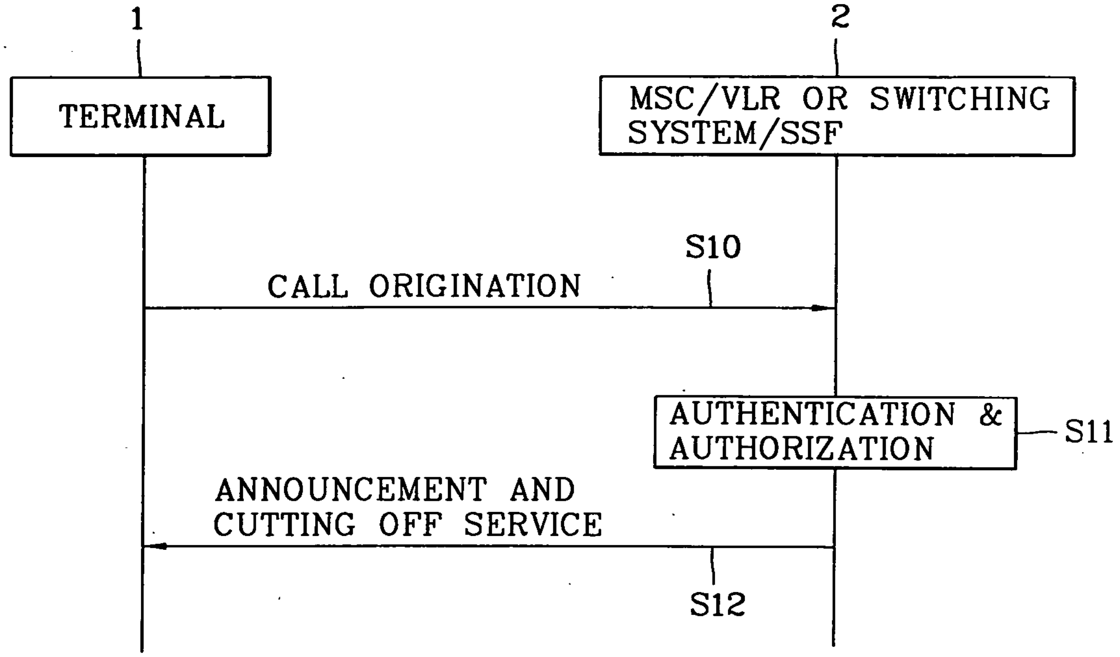
1
2
TERMINAL
MSC/VLR OR SWITCHING SYSTEM/SSF
S10
CALL ORIGINATION
AUTHENTICATION & AUTHORIZATION
S11
ANNOUNCEMENT AND CUTTING OFF SERVICE
S12

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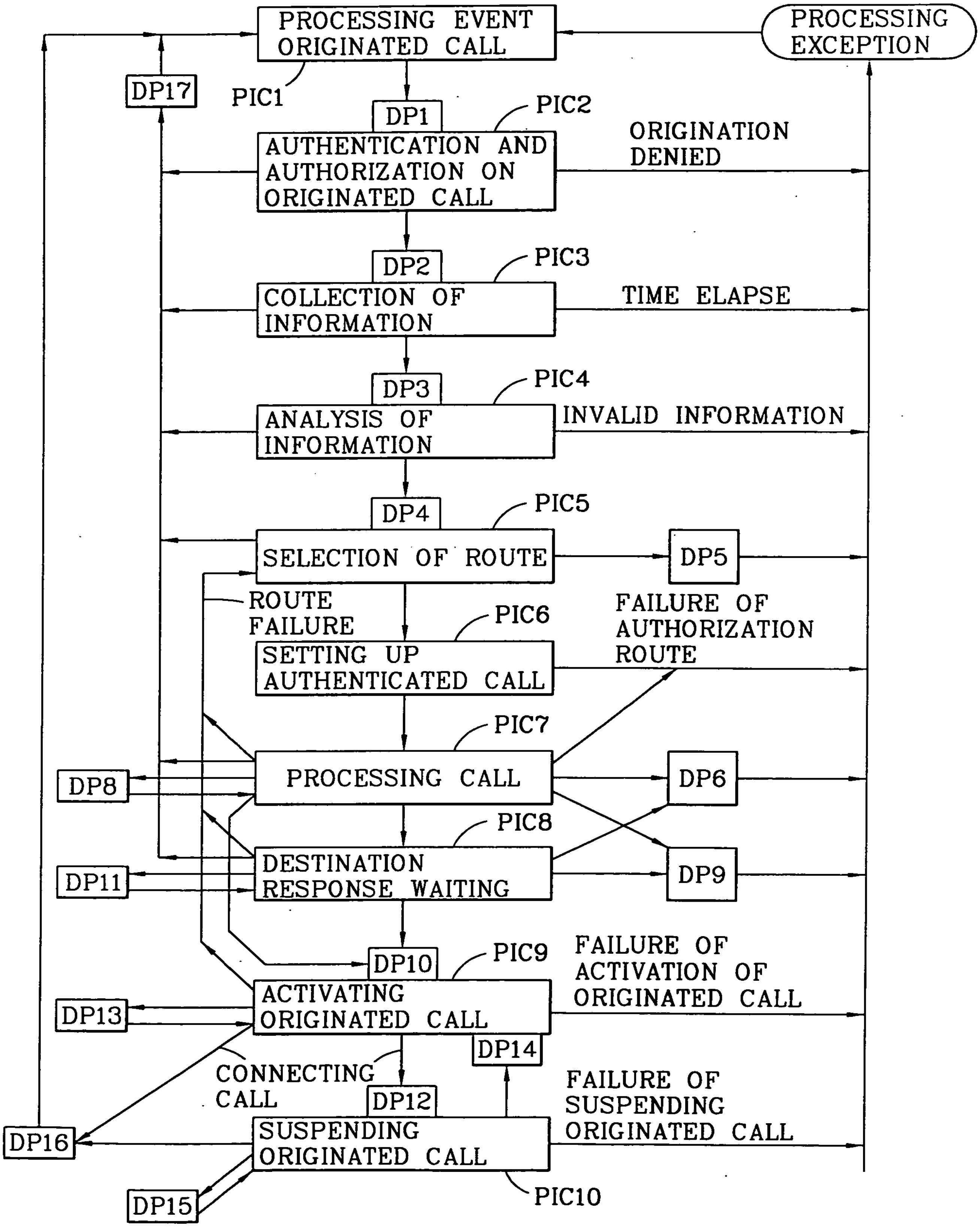
FIG. 2

BACKGROUND ART



PROCESSING EVENT ORIGINATED CALL
PROCESSING EXCEPTION
PIC1
DP17
DP1
PIC2
AUTHENTICATION AND AUTHORIZATION ON ORIGINATED CALL
ORIGINATION DENIED
DP2
PIC3
COLLECTION OF INFORMATION
TIME ELAPSE
DP3
PIC4
ANALYSIS OF INFORMATION
INVALID INFORMATION
DP4
PIC5
SELECTION OF ROUTE
DP5
ROUTE FAILURE
PIC6
SETTING UP AUTHENTICATED CALL
FAILURE OF AUTHORIZATION ROUTE
PIC7
PROCESSING CALL
DP8
DP6
PIC8
DESTINATION RESPONSE WAITING
DP11
DP9
DP10
PIC9
ACTIVATING ORIGINATED CALL
FAILURE OF ACTIVATION OF ORIGINATED CALL
DP13
DP14
CONNECTING CALL
DP12
FAILURE OF SUSPENDING ORIGINATED CALL
DP16
SUSPENDING ORIGINATED CALL
DP15
PIC10

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FIG. 3

BACKGROUND ART

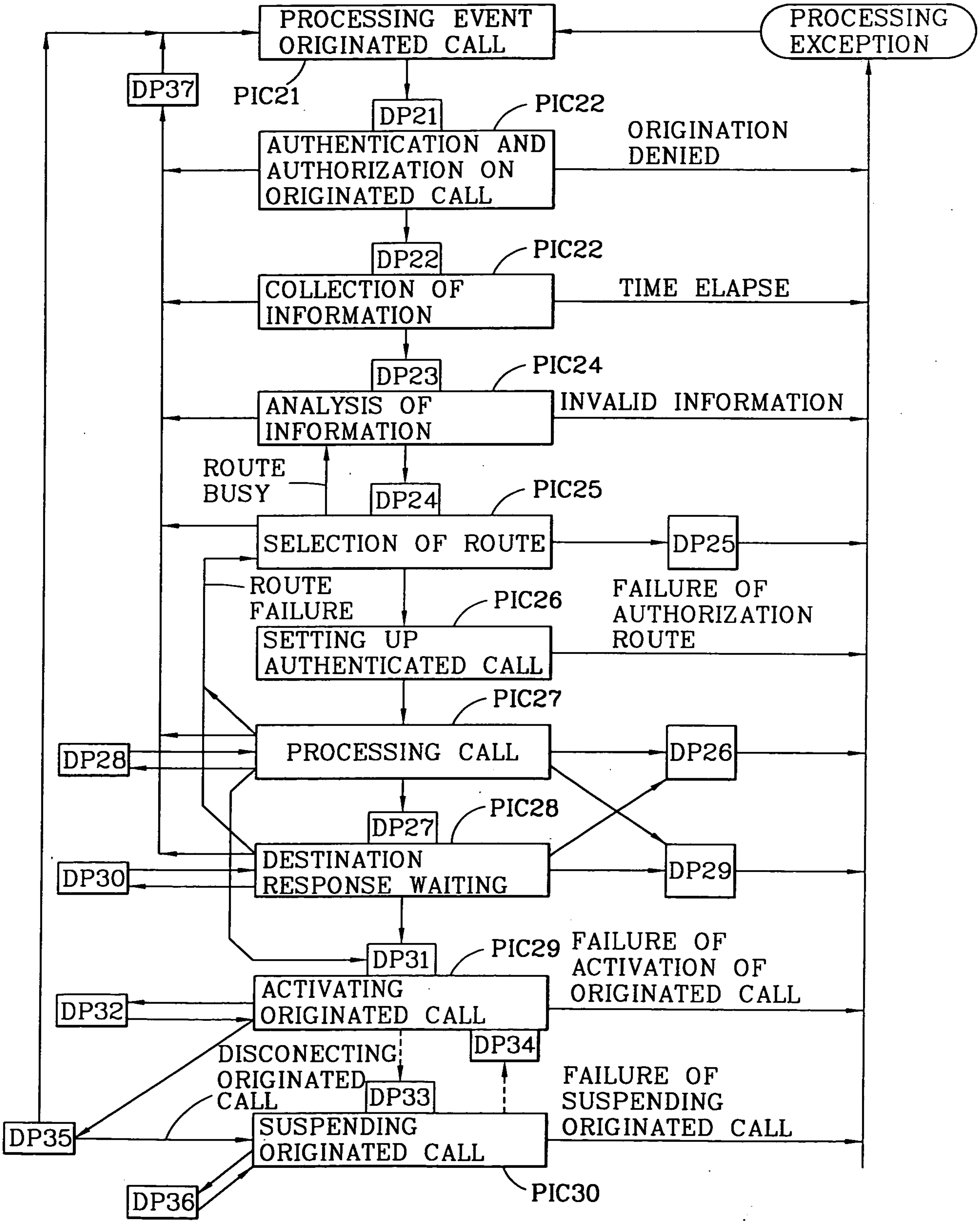
PROCESSING EVENT ORIGINATED CALL
PROCESSING EXCEPTION
DP37
PIC21
DP21
PIC22
AUTHENTICATION AND AUTHORIZATION ON ORIGINATED CALL
ORIGINATION DENIED
DP22
PIC22
COLLECTION OF INFORMATION
TIME ELAPSE
DP23
PIC24
ANALYSIS OF INFORMATION
INVALID INFORMATION
ROUTE BUSY
DP24
PIC25
SELECTION OF ROUTE
DP25
ROUTE FAILURE
PIC26
FAILURE OF AUTHORIZATION ROUTE
SETTING UP AUTHENTICATED CALL
PIC27
DP28
PROCESSING CALL
DP26
DP27
PIC28
DP30
DESTINATION RESPONSE WAITING
DP29
DP31
PIC29
FAILURE OF ACTIVATION OF ORIGINATED CALL
DP32
ACTIVATING ORIGINATED CALL
DP34
DISCONECTING ORIGINATED CALL
DP33
FAILURE OF SUSPENDING ORIGINATED CALL
DP35
SUSPENDING ORIGINATED CALL
DP36
PIC30

FIG. 4
BACKGROUND ART

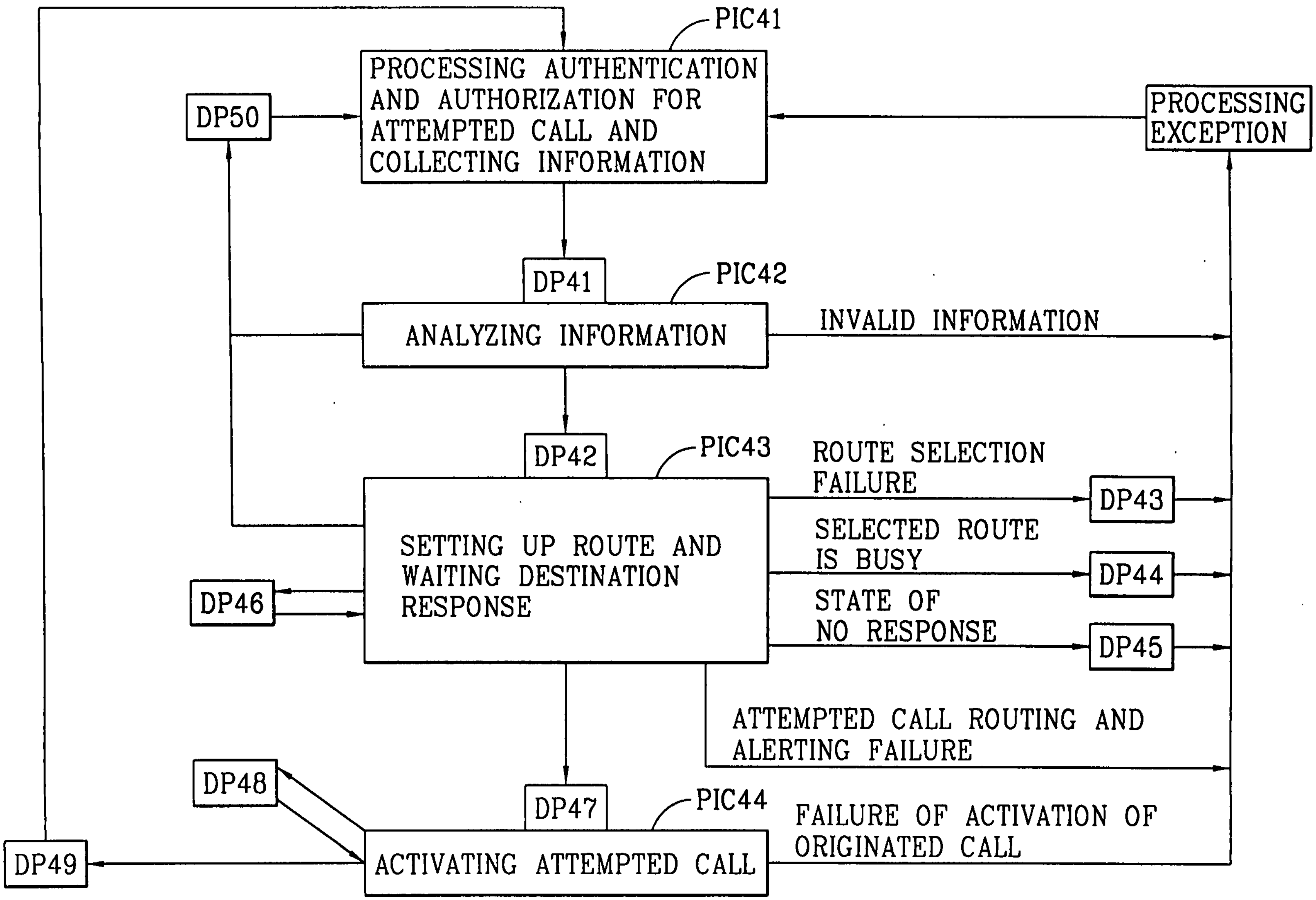
PIC41
PROCESSING AUTHENTICATION AND AUTHORIZATION FOR ATTEMPTED CALL AND COLLECTING INFORMATION
DP50
PROCESSING EXCEPTION
DP41
PIC42
ANALYZING INFORMATION
INVALID INFORMATION
DP42
PIC43
SETTING UP ROUTE AND WAITING DESTINATION RESPONSE
ROUTE SELECTION FAILURE
DP43
SELECTED ROUTE IS BUSY
DP44
STATE OF NO RESPONSE
DP45
DP46
ATTEMPTED CALL ROUTING AND ALERTING FAILURE
DP48
DP47
PIC44
FAILURE OF ACTIVATION OF ORIGINATED CALL
DP49
ACTIVATING ATTEMPTED CALL

FIG. 5

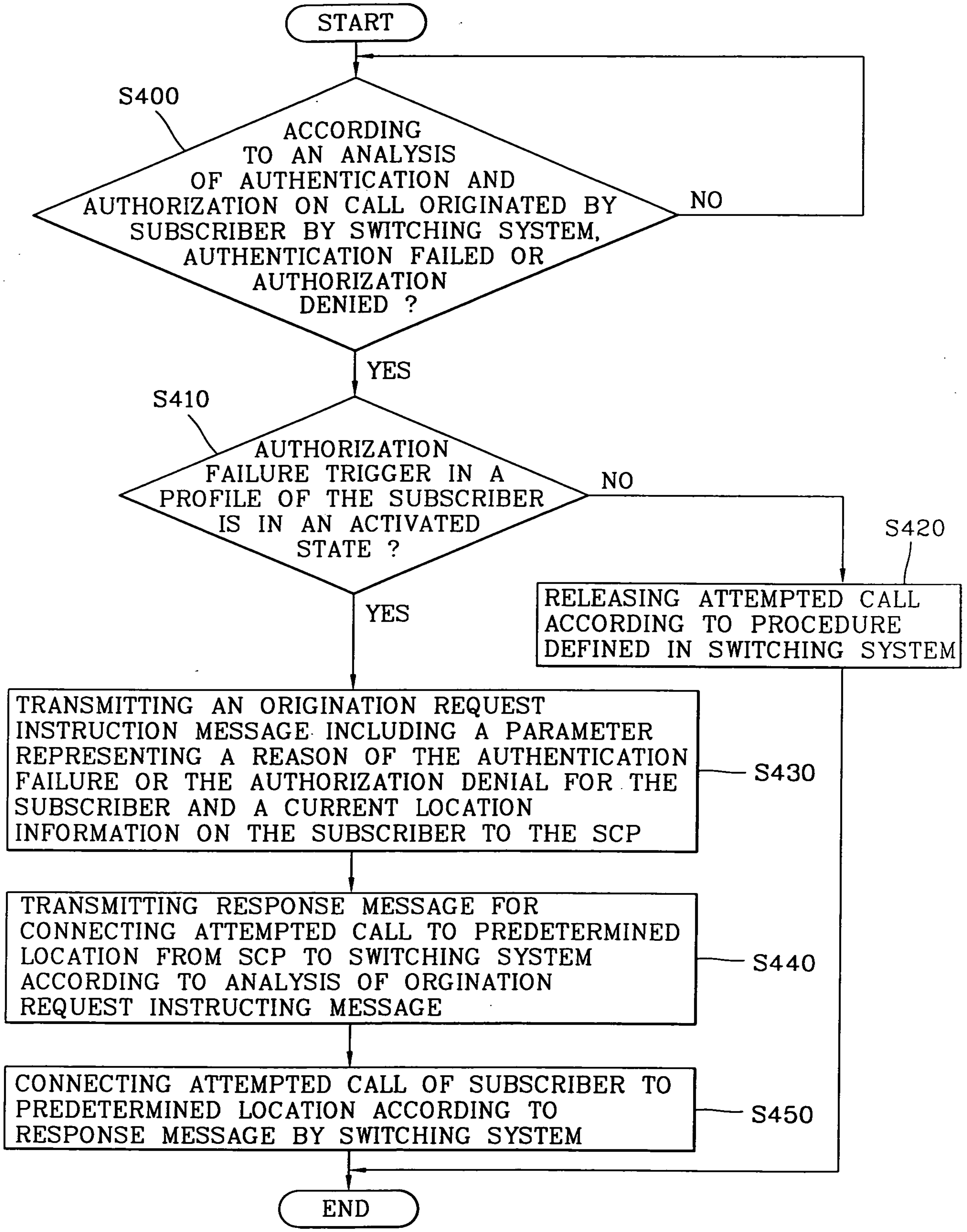
START
S400
ACCORDING TO AN ANALYSIS OF AUTHENTICATION AND AUTHORIZATION ON CALL ORIGINATED BY SUBSCRIBER BY SWITCHING SYSTEM, AUTHENTICATION FAILED OR AUTHORIZATION DENIED ?
NO
YES
S410
AUTHORIZATION FAILURE TRIGGER IN A PROFILE OF THE SUBSCRIBER IS IN AN ACTIVATED STATE ?
NO
S420
RELEASING ATTEMPTED CALL ACCORDING TO PROCEDURE DEFINED IN SWITCHING SYSTEM
YES
TRANSMITTING AN ORIGINATION REQUEST INSTRUCTION MESSAGE INCLUDING A PARAMETER REPRESENTING A REASON OF THE AUTHENTICATION FAILURE OR THE AUTHORIZATION DENIAL FOR THE SUBSCRIBER AND A CURRENT LOCATION INFORMATION ON THE SUBSCRIBER TO THE SCP
S430
TRANSMITTING RESPONSE MESSAGE FOR CONNECTING ATTEMPTED CALL TO PREDETERMINED LOCATION FROM SCP TO SWITCHING SYSTEM ACCORDING TO ANALYSIS OF ORGINATION REQUEST INSTRUCTING MESSAGE
S440
CONNECTING ATTEMPTED CALL OF SUBSCRIBER TO PREDETERMINED LOCATION ACCORDING TO RESPONSE MESSAGE BY SWITCHING SYSTEM
S450
END

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FIG. 6

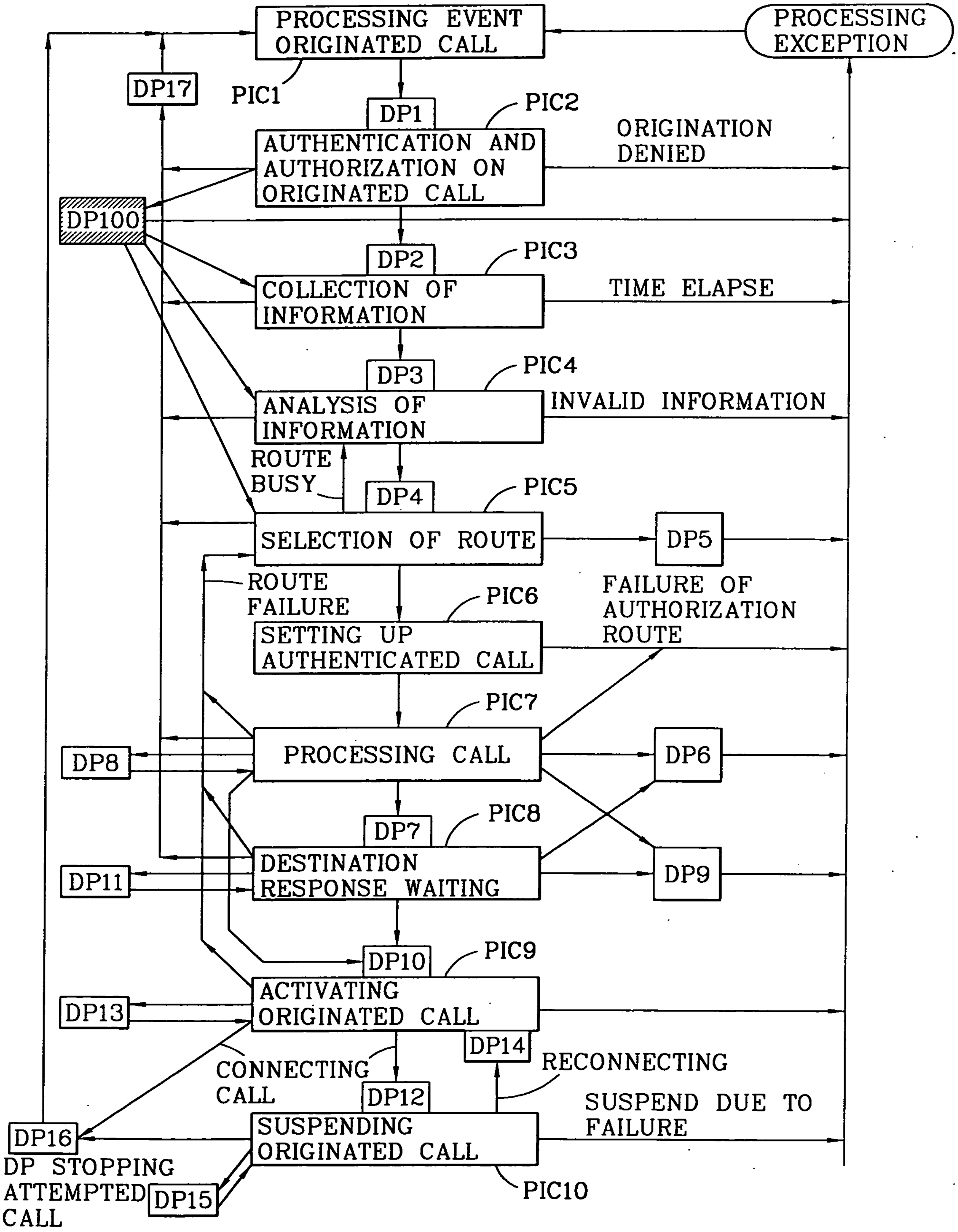
PROCESSING EVENT ORIGINATED CALL
PIC1
PROCESSING EXCEPTION
DP17
DP1
PIC2
AUTHENTICATION AND AUTHORIZATION ON ORIGINATED CALL
ORIGINATION DENIED
DP100
DP2
PIC3
COLLECTION OF INFORMATION
TIME ELAPSE
DP3
PIC4
ANALYSIS OF INFORMATION
INVALID INFORMATION
ROUTE BUSY
DP4
PIC5
SELECTION OF ROUTE
DP5
ROUTE FAILURE
PIC6
FAILURE OF AUTHORIZATION ROUTE
SETTING UP AUTHENTICATED CALL
PIC7
DP8
PROCESSING CALL
DP6
DP7
PIC8
DP11
DESTINATION RESPONSE WAITING
DP9
DP10
PIC9
DP13
ACTIVATING ORIGINATED CALL
DP14
CONNECTING CALL
RECONNECTING
DP12
SUSPEND DUE TO FAILURE
DP16
SUSPENDING ORIGINATED CALL
DP STOPPING ATTEMPTED CALL
DP15
PIC10

FIG. 7

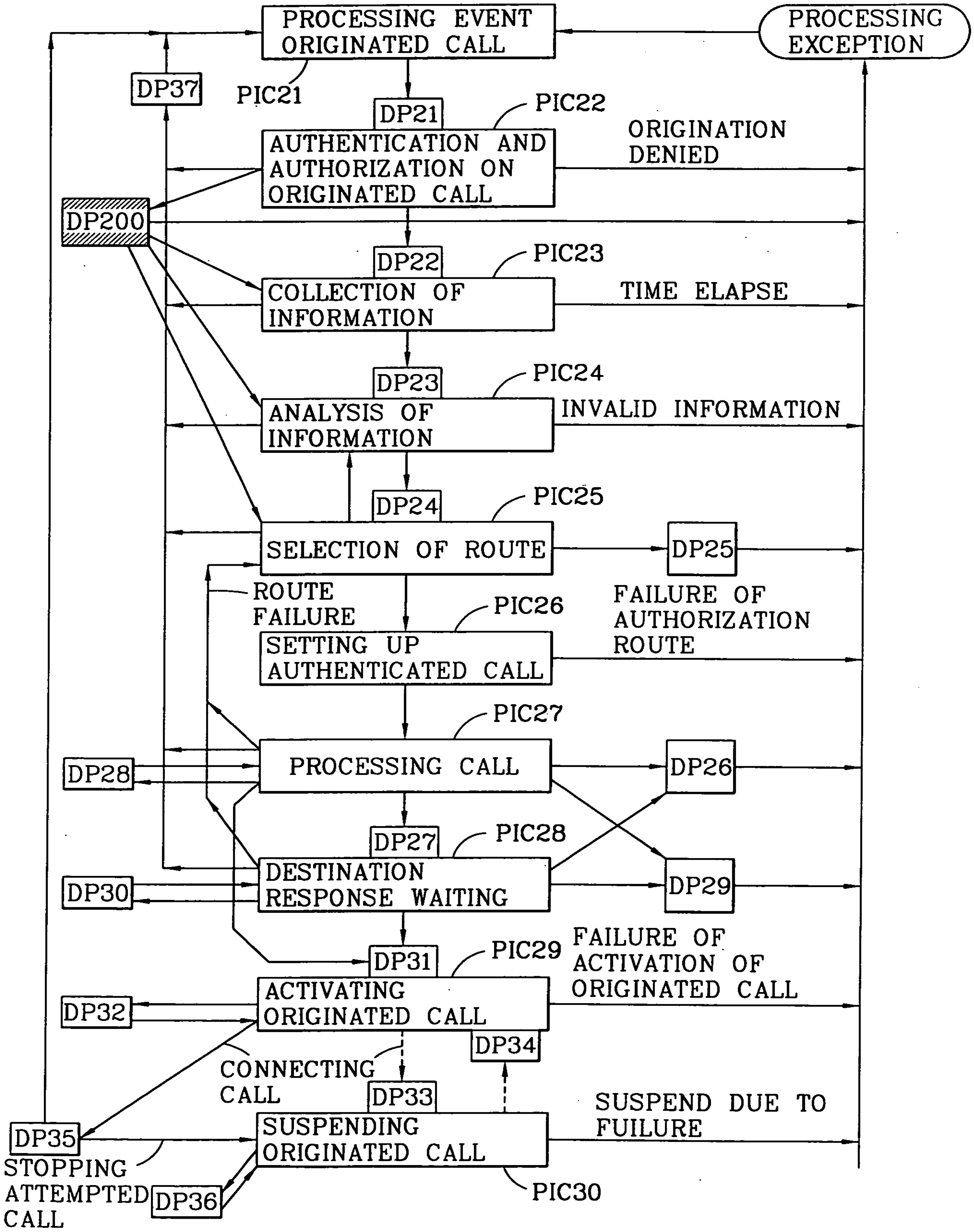
PROCESSING EVENT ORIGINATED CALL
PROCESSING EXCEPTION
DP37
PIC21
DP21
PIC22
AUTHENTICATION AND AUTHORIZATION ON ORIGINATED CALL
ORIGINATION DENIED
DP200
DP22
PIC23
COLLECTION OF INFORMATION
TIME ELAPSE
DP23
PIC24
ANALYSIS OF INFORMATION
INVALID INFORMATION
DP24
PIC25
SELECTION OF ROUTE
DP25
ROUTE FAILURE
PIC26
FAILURE OF AUTHORIZATION ROUTE
SETTING UP AUTHENTICATED CALL
PIC27
DP28
PROCESSING CALL
DP26
DP27
PIC28
DP30
DESTINATION RESPONSE WAITING
DP29
DP31
PIC29
FAILURE OF ACTIVATION OF ORIGINATED CALL
DP32
ACTIVATING ORIGINATED CALL
DP34
CONNECTING CALL
DP33
SUSPEND DUE TO FUILURE
DP35
SUSPENDING ORIGINATED CALL
STOPPING ATTEMPTED CALL
DP36
PIC30

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FIG. 8

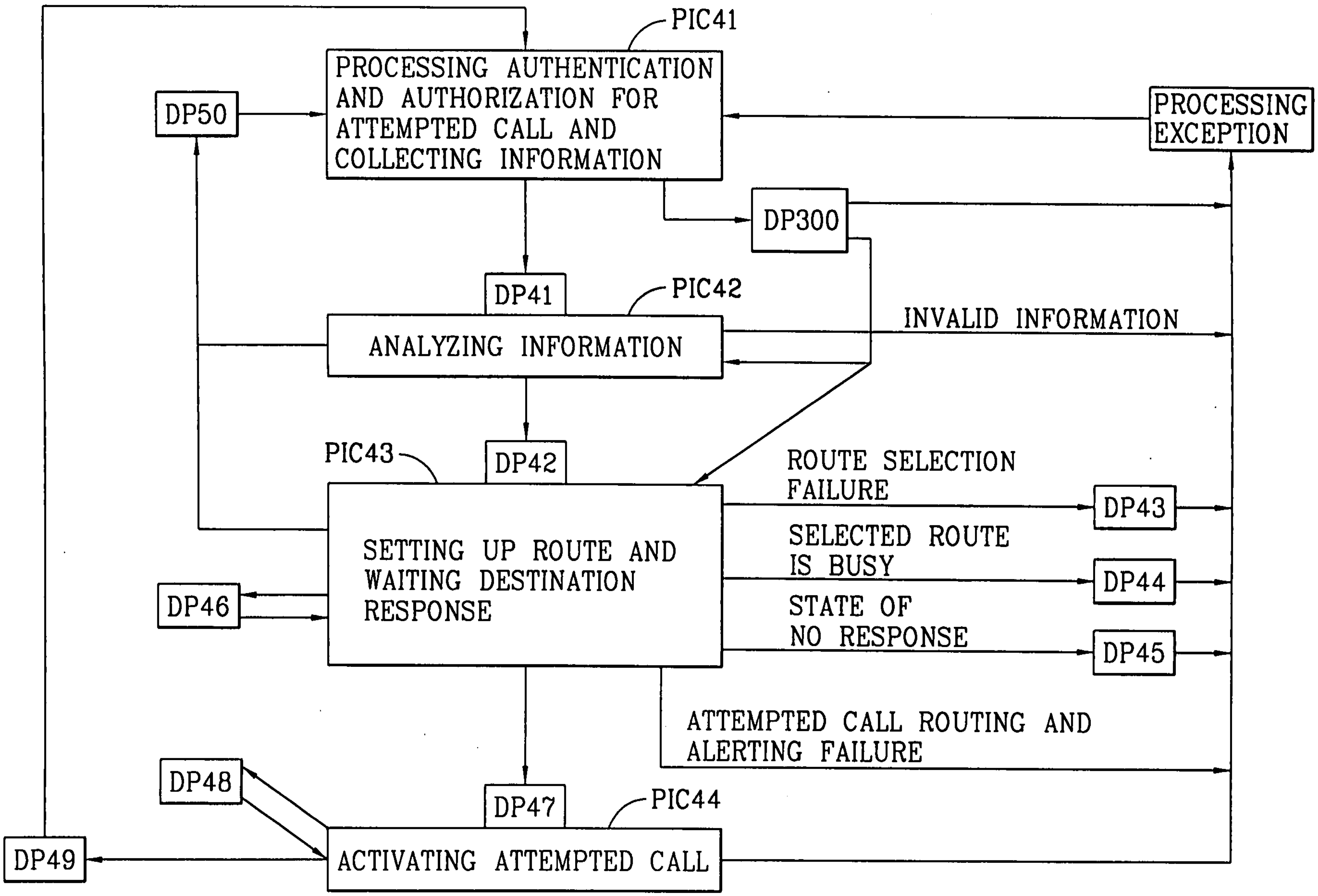

PIC41
PROCESSING AUTHENTICATION AND AUTHORIZATION FOR ATTEMPTED CALL AND COLLECTING INFORMATION
DP50
PROCESSING EXCEPTION
DP300
DP41
PIC42
ANALYZING INFORMATION
INVALID INFORMATION
PIC43
DP42
ROUTE SELECTION FAILURE
DP43
SETTING UP ROUTE AND WAITING DESTINATION RESPONSE
SELECTED ROUTE IS BUSY
DP44
DP46
STATE OF NO RESPONSE
DP45
ATTEMPTED CALL ROUTING AND ALERTING FAILURE
DP48
DP47
PIC44
DP49
ACTIVATING ATTEMPTED CALL

FIG. 9A

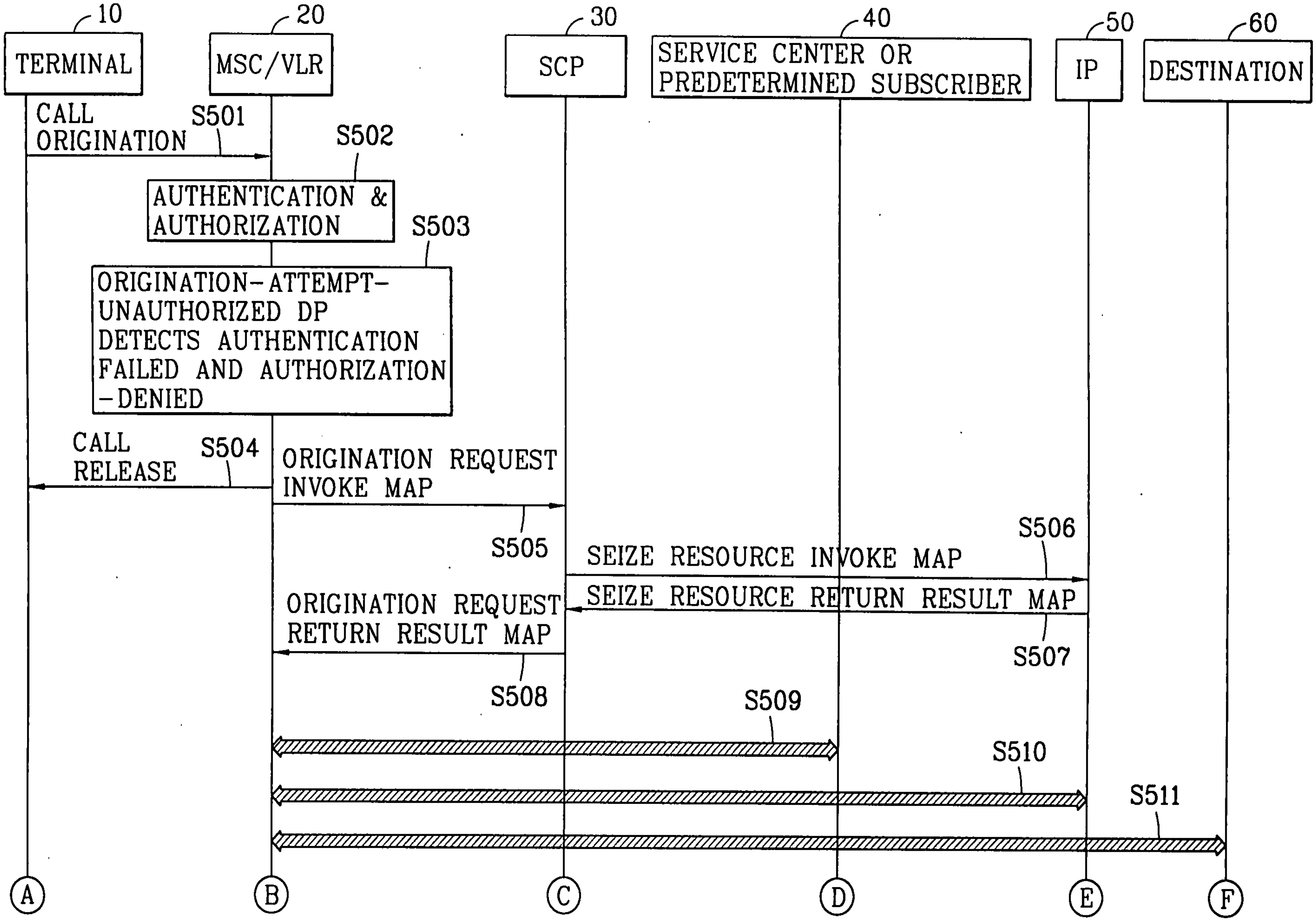

10
TERMINAL
20
MSC/VLR
30
SCP
40
SERVICE CENTER OR PREDETERMINED SUBSCRIBER
50
IP
60
DESTINATION
CALL ORIGINATION
S501
S502
AUTHENTICATION & AUTHORIZATION
S503
ORIGINATION-ATTEMPT-UNAUTHORIZED DP DETECTS AUTHENTICATION FAILED AND AUTHORIZATION-DENIED
CALL RELEASE
S504
ORIGINATION REQUEST INVOKE MAP
S505
SEIZE RESOURCE INVOKE MAP
S506
SEIZE RESOURCE RETURN RESULT MAP
S507
ORIGINATION REQUEST RETURN RESULT MAP
S508
S509
S510
S511
A
B
C
D
E
F

FIG. 9B

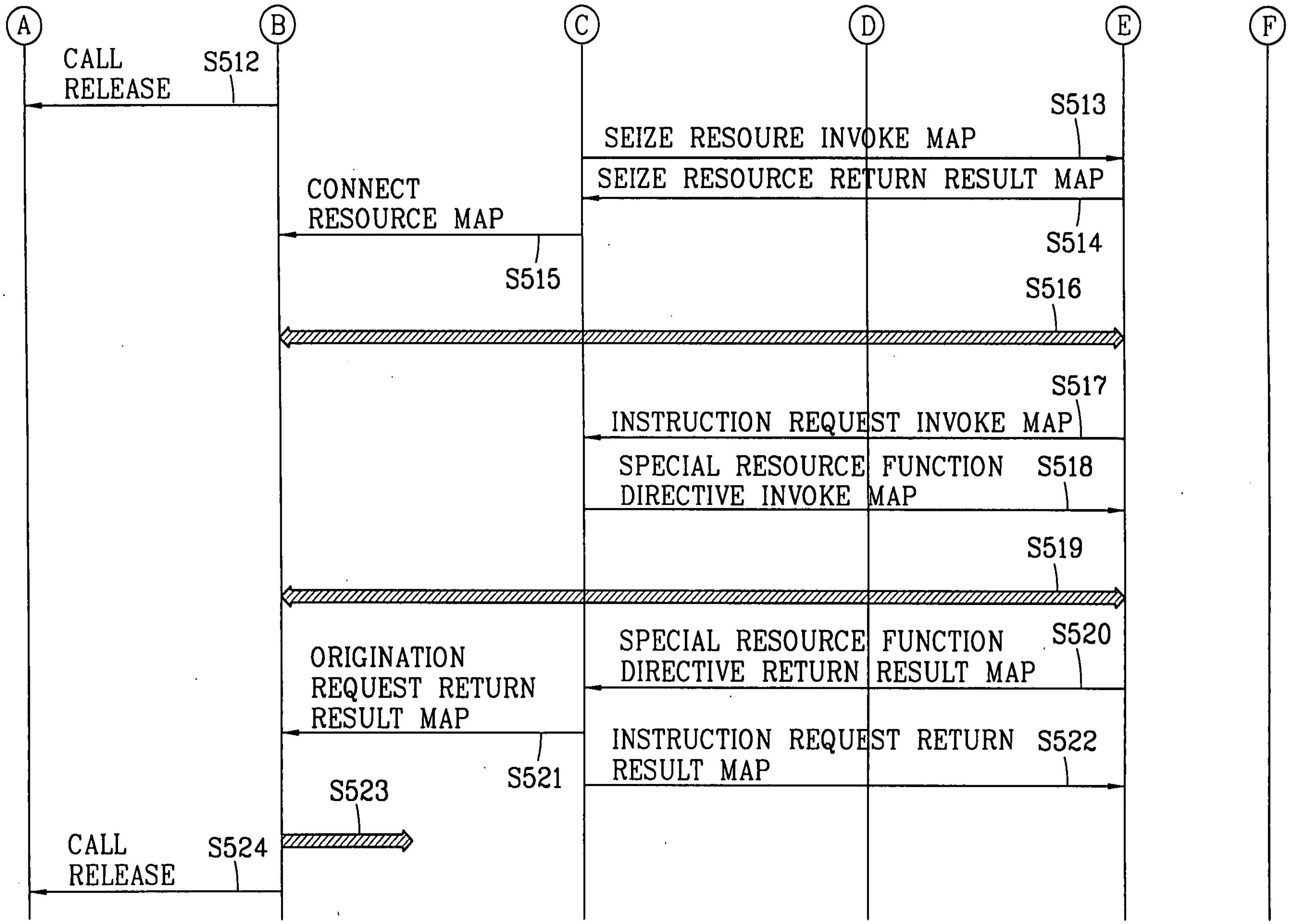
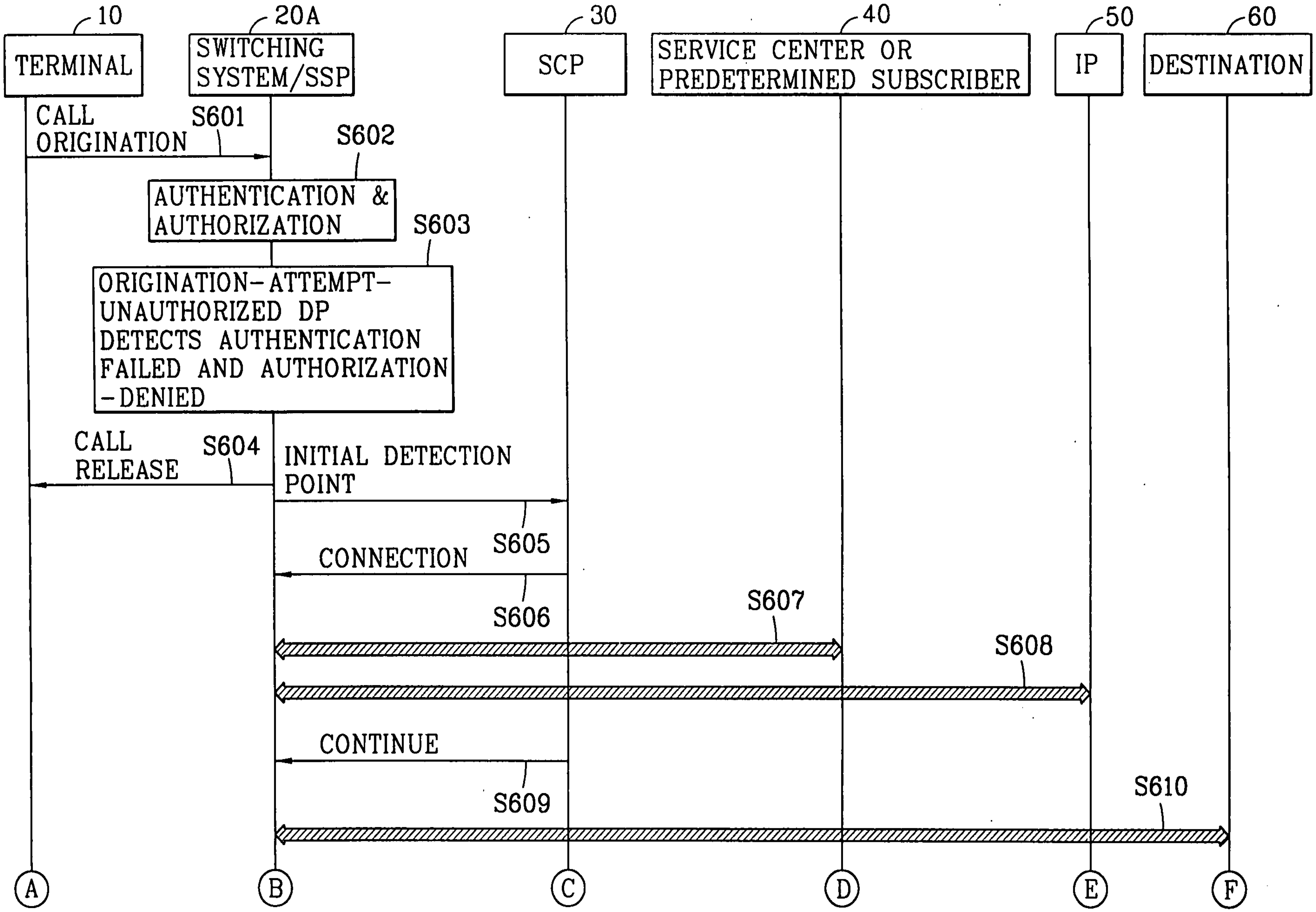

A
B
C
D
E
F
CALL RELEASE
S512
S513
SEIZE RESOURE INVOKE MAP
SEIZE RESOURCE RETURN RESULT MAP
S514
CONNECT RESOURCE MAP
S515
S516
S517
INSTRUCTION REQUEST INVOKE MAP
SPECIAL RESOURCE FUNCTION DIRECTIVE INVOKE MAP
S518
S519
SPECIAL RESOURCE FUNCTION DIRECTIVE RETURN RESULT MAP
S520
ORIGINATION REQUEST RETURN RESULT MAP
S521
INSTRUCTION REQUEST RETURN RESULT MAP
S522
S523
CALL RELEASE
S524

FIG. 10A


10
TERMINAL
20A
SWITCHING SYSTEM/SSP
30
SCP
40
SERVICE CENTER OR PREDETERMINED SUBSCRIBER
50
IP
60
DESTINATION
CALL ORIGINATION
S601
S602
AUTHENTICATION & AUTHORIZATION
S603
ORIGINATION-ATTEMPT-UNAUTHORIZED DP DETECTS AUTHENTICATION FAILED AND AUTHORIZATION -DENIED
CALL RELEASE
S604
INITIAL DETECTION POINT
S605
CONNECTION
S606
S607
S608
CONTINUE
S609
S610
A
B
C
D
E
F

T0Z0T0"60605Z60

FIG. 10B

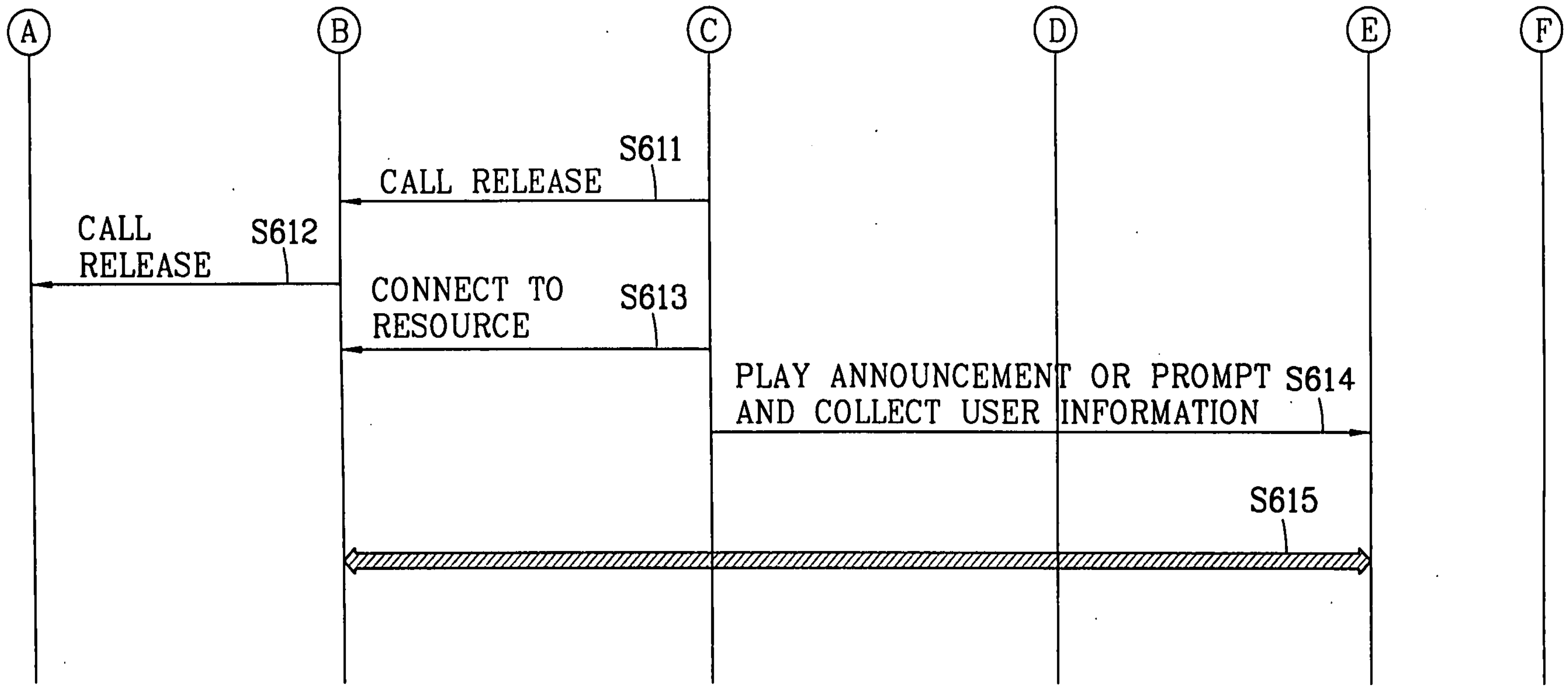

A
B
C
D
E
F
S611
CALL RELEASE
CALL
RELEASE
S612
CONNECT TO
RESOURCE
S613
PLAY ANNOUNCEMENT OR PROMPT
AND COLLECT USER INFORMATION
S614
S615

FIG. 11A

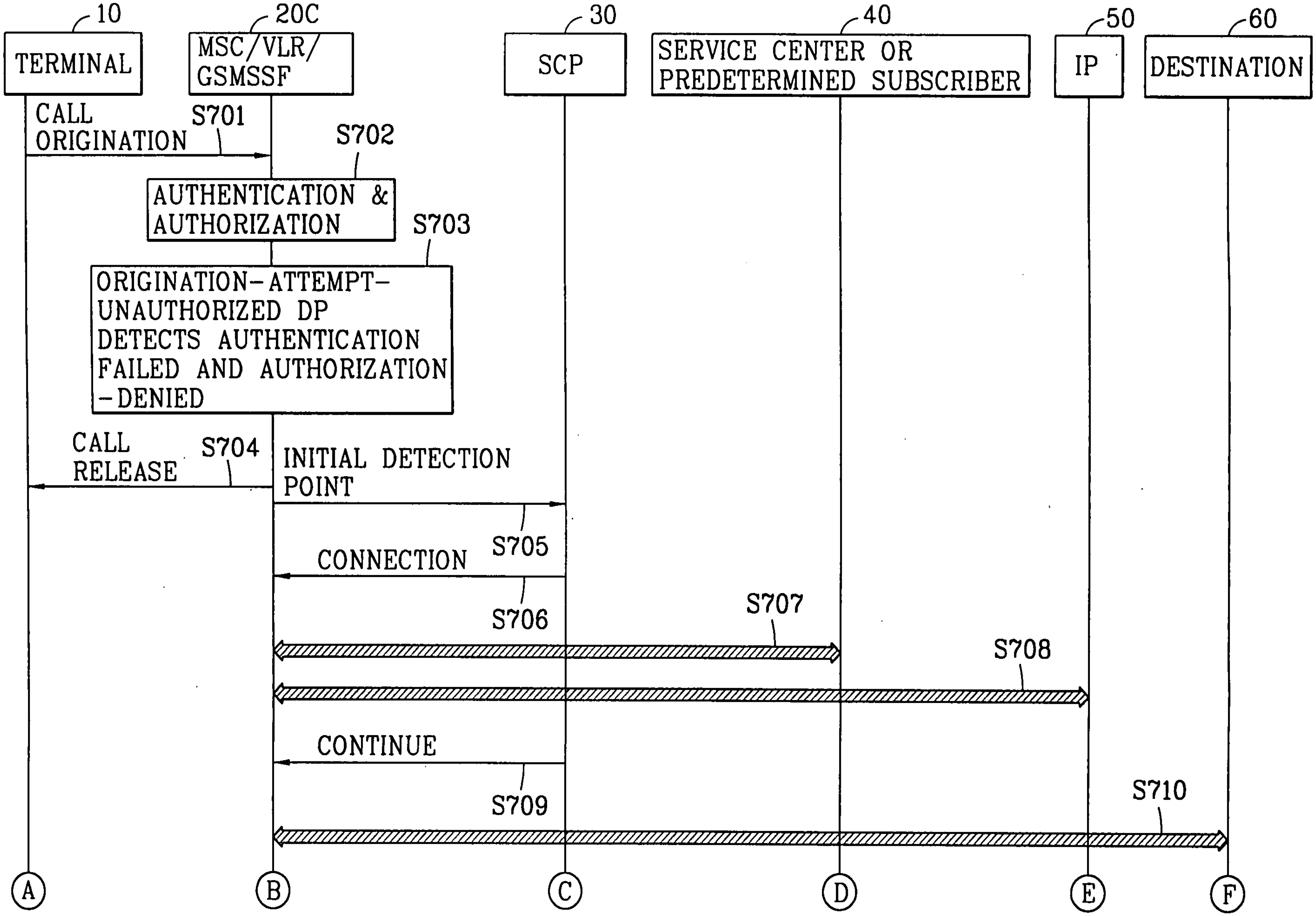
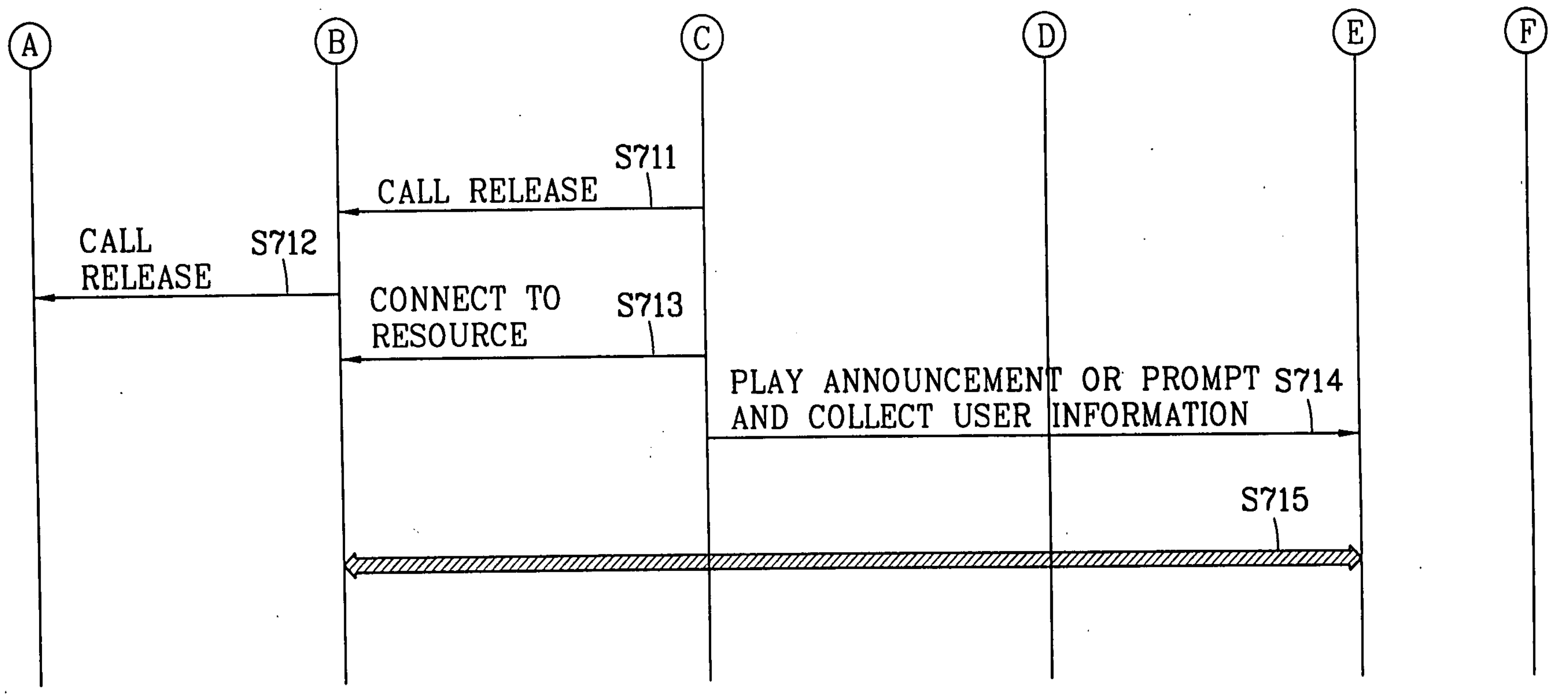

10
TERMINAL
20C
MSC/VLR/
GSMSSF
30
SCP
40
SERVICE CENTER OR
PREDETERMINED SUBSCRIBER
50
IP
60
DESTINATION
CALL
ORIGINATION
S701
S702
AUTHENTICATION &
AUTHORIZATION
S703
ORIGINATION-ATTEMPT-
UNAUTHORIZED DP
DETECTS AUTHENTICATION
FAILED AND AUTHORIZATION
-DENIED
CALL
RELEASE
S704
INITIAL DETECTION
POINT
S705
CONNECTION
S706
S707
S708
CONTINUE
S709
S710
A
B
C
D
E
F

FIG. 11B


A
B
C
D
E
F
CALL RELEASE
S711
CALL RELEASE
S712
CONNECT TO RESOURCE
S713
PLAY ANNOUNCEMENT OR PROMPT AND COLLECT USER INFORMATION
S714
S715